Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product name: FORMULA 50
Product use: General Purpose Cleaner
Product code: 0859
Date of issue: 06/08/09

Supersedes: 08/11/08

Emergency Telephone Numbers
For MSDS Information:
Compliance Services 1-877-I-BUY-ZEP (428-9937)

For Medical Emergency
(877) 541-2016 Toll Free - All Calls Recorded

For Transportation Emergency
CHEMTREC: (800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

Prepared By
Compliance Services
1420 Seaboard Industrial Blvd.
Atlanta, GA  30318

Section 2. Hazards Identification

Emergency overview
DANGER!
CAUSES EYE BURNS. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN.

NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse effects are lessened by following all prescribed safety precautions, including the use of proper personal protective equipment.

Acute Effects

Routes of Entry
Dermal contact. Eye contact. Inhalation.

Eyes
Causes eye burns. Direct contact with the eyes can cause irreversible damage, including blindness.

Skin
Causes skin irritation. Harmful if absorbed through the skin. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.

Inhalation
Avoid breathing vapors, spray or mists. Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterized by coughing, choking or shortness of breath. Can cause central nervous system (CNS) depression.

Ingestion
Harmful if swallowed. May cause burns to mouth, throat and stomach.

Chronic effects
Overexposure of this product by inhalation or absorption can produce central nervous system depression resulting in headache, nausea and/or dizziness. Contains material which may cause damage to the following organs: blood, kidneys, liver.

Carcinogenicity
Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Product/ingredient name

<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>IARC</th>
<th>EPA</th>
<th>NIOSH</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>None.</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

Additional Information: See Toxicological Information (Section 11)

Section 3. Composition/Information on Ingredients

Name of Hazardous Ingredients

<table>
<thead>
<tr>
<th>CAS number</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>111-76-2</td>
<td>1 - 5</td>
</tr>
<tr>
<td>6834-92-0</td>
<td>1 - 5</td>
</tr>
<tr>
<td>25155-30-0</td>
<td>1 - 5</td>
</tr>
<tr>
<td>64-02-8</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

ETHYLENE GLYCOL MONOBUTYL ETHER; 2-butoxyethanol; butyl cellosolve
SODIUM METASILICATE; silicic acid (H2-Si-O3) disodium salt; water glass
SODIUM DODECYLBENZENE SULFONATE; linear alkyl aryl sodium sulfonate; Sodium DDBSA
TETRASODIUM ETHYLENEDIAMINE TETRAACETATE; ethylenediamine tetraacetic acid; tetrасodium salt
Section 4. First Aid Measures

**Eye Contact**
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention immediately.

**Skin Contact**
Flush affected skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation develops.

**Inhalation**
Move exposed person to fresh air. Get medical attention if adverse health effects persist or are severe.

**Ingestion**
Do not induce vomiting unless directed to do so by medical personnel. If affected person is conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire Fighting Measures

**Flash Point**
None.

**Flammable Limits**
Not applicable

**Flammability**
Non-combustible.

**Fire hazard**
May emit toxic fumes under fire conditions.

**Fire-Fighting Procedures**
Use an extinguishing agent suitable for the surrounding fire. Do not release runoff from fire to sewers or waterways.

Section 6. Accidental Release Measures

**Spill Clean up**
Put on appropriate personal protective equipment (see section 8). Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and Storage

**Handling**
Put on appropriate personal protective equipment (see section 8). Avoid contact with eyes, skin and clothing. Do not breathe vapor or mist. Use with adequate ventilation. Do not ingest. Do not reuse container. Wash thoroughly after handling. Observe label precautions.

**Storage**
Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Store between the following temperatures: 40°F - 120°F (4.4°C - 49°C). Keep out of the reach of children.

Section 8. Exposure Controls/Personal Protection

**Product name**
ETHYLENE GLYCOL MONOBUTYL ETHER; 2-butoxyethanol; butyl cellosolve

**Exposure limits**
ACGIH TLV (United States). Skin TWA: 20 ppm 8 hour(s). Form:
OSHA PEL (United States). Skin TWA: 50 ppm 8 hour(s). Form:
Supplier Suggested (United States). CEIL: 2 mg/m³ Form:

**Personal Protective Equipment (PPE)**

**Eyes**
Splash goggles.

**Body**
Wear appropriate protective clothing to prevent skin contact. Recommended: Neoprene gloves. Nitrile gloves. Rubber gloves. Synthetic apron.

**Respiratory**
Use with adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Wear appropriate respirator when ventilation is inadequate.

Section 9. Physical and Chemical Properties

**Physical State**
Liquid.

**pH**
12.5 - 13.5

**Boiling Point**
104.44°C (220°F)

**Specific Gravity**
1.07

**Solubility**
Easily soluble in the following materials: cold water and hot water.

**Color**
Clear. Dark Blue.

**Odor**
Mild.

**Vapor Pressure**
Not determined.

**Vapor Density**
Not determined.

**Evaporation Rate**
1 (Water = 1)

**VOC (Consumer)**
42.3 (g/l). 0.35 lbs/gal (3.96%)
Section 10. Stability and Reactivity

Stability and Reactivity  The product is stable.
Incompatibility  Reactive or incompatible with the following materials: oxidizing materials and acids.
Hazardous Polymerization  Will not occur.
Hazardous Decomposition Products  carbon oxides (CO, CO₂)

Section 11. Toxicological Information

Acute Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene Glycol Monobutyl Ether</td>
<td>LD50 Dermal</td>
<td>Guinea pig</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Guinea pig</td>
<td>1200 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Guinea pig</td>
<td>&gt;633 ppm</td>
<td>1 hours</td>
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<tr>
<td>Sodium Metasilicate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1153 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Sodium Dodecylbenzene Sulfonate</td>
<td>LD50 Oral</td>
<td>Mouse</td>
<td>770 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Mouse</td>
<td>2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Tetrasodium Ethylenediamine Tetraacetate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1260 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4100 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Section 12. Ecological Information

Environmental Effects  No known significant effects or critical hazards.
Aquatic Ecotoxicity  Not available.

Section 13. Disposal Considerations

Waste Information  Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities for additional information.
Waste Stream  Code: D002
Classification: - [Hazardous waste]
Origin: - [RCRA waste.]

Section 14. Transport Information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
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</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>Not a DOT controlled material (United States).</td>
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</table>

NOTE: DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment.
PG*: Packing group

Section 15. Regulatory Information

U.S. Federal Regulations
SARA 313 toxic chemical notification and release reporting:
Product name
Ethylene Glycol Monobutyl Ether
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Sodium Dodecylbenzene Sulfonate
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
All Components of this product are listed or exempt from listing on TSCA Inventory.

State Regulations
California Prop 65  No products were found.
Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

*NOTE: Hazard Determination System (HDS) ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although these ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HDS ratings are to be used with a fully implemented program to relay the meanings of this scale.